



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/552,285

10/03/2005

Manfred Heckmann

12810-00146-US1

2063

23416

7590

03/23/2009

CONNOLLY BOVE LODGE & HUTZ, LLP

P O BOX 2207

WILMINGTON, DE 19899

EXAMINER

WU, IVES J

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

03/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,285	<b>Applicant(s)</b> HECKMANN ET AL.	
	<b>Examiner</b> IVES WU	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

(1). Applicants' Amendments and Remarks filed on 12/30/2008 have been received.

Claims 1 and 9 are amended. Claim 8 is cancelled.

The 112 2<sup>nd</sup> rejection of claim 9 in prior Office Action dated 9/30/2008 is withdrawn in view of the current Amendments.

The rejection of claim 1 is revised in response to the current Amendments and presented with rest of the claims in the following.

### *Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(2). **Claims 1-7, 9-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Janzen et al (DD 145540A).

As to a process for purifying and cooling a gas stream comprising a dialkyl ester A) of an aromatic dicarboxylic acid, which comprises treating the gas stream with an aliphatic dihydroxy compound B) at above the melting point of dialkyl ester A) in a 1<sup>st</sup> stage in **independent claim 1**, Janzen et al (DD 145540A) disclose method and device for the reuse and recovery of dimethyl terephthalate sublimate (Title). It pertains a method and device for separator and recovery of dimethylterephthalate sublimate. In the case of manufacturing of polyethylene terephthalate with the help of a conventional discontinuous and continuous method, the sublimate of dimethyl terephthalate is accumulated over the course of melting and intermediate storage. Dimethyl terephthalate is precipitated or dissolved in a sublimate separator consisting of several chambers and provided with a glycol lock (seal), while volatile particles which are carried along or entrained, e.g. water are injected in a water separator connected in series. When changing loading of the reaction vessels, the glycol is guided through dimethyl terephthalate sublimate separator, and proportionated with dimethyl terephthalate into the reaction vessel. The dimethyl terephthalate sublimate separator consists of 3 chambers whereby one of outer chambers is provided with heated-deaeration pipeline, the other outer chamber is provided with mixture discharge pipeline, and central chamber is provided with glycol proportionating pipeline, having

Art Unit: 1797

a distribution disk, inert gas proportioning pipeline, and a heated dimethyl terephthalate sublimate pipeline (Abstract). The glycol which is used as blocking liquid is having a temperature of 20 to 160° C, preferably 110 to 130°C (Claim 1 of DD 145540A), which reads on the limitations of instant claim.

As to treating the gas stream with an aliphatic dihydroxy compound B) at above the melting point of the dihydroxy compound B) in at least one 2<sup>nd</sup> stage in the process in **independent claim 1**, it would be obvious to have 2<sup>nd</sup> stage with same treatment of 1<sup>st</sup> stage because duplication of parts render obvious. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

As to the dihydroxy compound B) having a temperature above 140°C in 1<sup>st</sup> stage and having a temperature of from 20 to 80°C in 2<sup>nd</sup> stage in **independent claim 1**, Janzen et al (DD 145540A) disclose the temperature of glycol from 20 to 160°C (claim 1 – DD 145540A), which overlaps temperature of two stages as claimed, therefore, it applies when there are two units.

As to dialkyl ester A) to be an ester of terephthalate acid, isophthalic acid, 2,6-naphthalene dicarboxylic acid or a mixture thereof in **claim 2**, dialkyl ester A) having alkyl radicals from 1 to 4 carbon atoms in **claims 3 and 10**, dialkyl ester A) to be dimethyl terephthalate in **claims 7 and 20**, Janzen et al (DD 145540A) disclose dimethyl terephthalate (Abstract).

As to gas stream which is purified and cooled to be a laden inert gas stream in **claims 4 and 11-12**, Janzen et al (DD 145540A) disclose inert gas pipeline which comes in the DMT sublimate separator and to the dimethyl terephthalate back to DMT sublimate separator in Figure, which reads on the limitations of instant claim.

As to dihydroxy compound B) used to be a diol having from 2 to 6 carbon atoms in **claims 5 and 13-15**, Janzen et al (DD 145540A) disclose glycol (Abstract).

As to dihydroxy compound B) used to be 1,4-butanediol in **claims 6 and 16-19**, Janzen et al (DD 145540A) disclose glycol which is a general term for dihydric alcohol, it would include 1,4-butanediol.

As to gas stream containing less than 20 ppm by weight of aromatic dialkyl ester A) after purification and cooling in **claim 9**, in view of the process disclosed by Janzen et al (DD

Art Unit: 1797

145540A), its purpose is to recover the DMT sublimate, therefore, it would contains less than 20 ppm after it runs continuous.

### ***Response to Arguments***

(3). Applicant's arguments filed on 12/30/2008 have been fully considered but they are not persuasive.

Applicants state that prior art Janzen et al (DD145540) do not describe or suggest the two-stage process for purifying and cooling a gas stream; a combination is not encompassed or recommended according to the invention. However, even with the reference's mentioning of two stage, Applicants point out that 2<sup>nd</sup> stage is in no way technically comparable to the presently claimed process (page 5 & 6, current Remarks). However, because it is obvious to have 2<sup>nd</sup> identical scrubber unit in series with 1<sup>st</sup> unit, Applicants are suggested to provide unexpected results or criticality for 2<sup>nd</sup> scrubbing stage. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). The arguments of Counsel can not take the place of evidence in the records. *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1797

Date: March 16, 2009

/DUANE SMITH/

Supervisory Patent Examiner, Art Unit 1797